UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,508	12/05/2003	Lavinia C. Popescu	02.36US	9085

23487 7590 08/02/2004

THE ESTEE LAUDER COS, INC
ATTN: KAREN A. LOWNEY
125 PINELAWN ROAD
MELVILLE, NY 11747

EXAMINER	
KOSSON, ROSANNE	
ART UNIT	**PAPER NUMBER**
1651	

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/728,508	POPESCU ET AL.	
	Examiner	Art Unit	
	Rosanne Kosson	1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *19 and 20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicants' election of the invention of Group I, claims 1-18, in the reply filed on July 16, 2004 is acknowledged. Because Applicants did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 19 and 20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species and/or invention, there being no allowable generic or linking claim. As discussed immediately above, election was made **without** traverse in the reply filed on July 16, 2004.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 6-10, 12 and 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Richardson et al. (U.S. 5,490,980). Richardson discloses a method of cross-linking human keratin proteins, including those found in hair, by applying a composition comprising an effective amount of transglutaminase to hair. Richardson also discloses a method of covalently bonding an alkyl amine

moiety, such as in lysine, to a glutamine residue, both of which are contained in the keratin of hair, by contacting the hair with a composition comprising an effective amount of transglutaminase (see column 1, lines 14-20; column 1, line 51, to column 2, line 8; column 2, lines 23-38). The source of the transglutaminase may be mammalian or microbial and may be present in an amount of 0.001% to 20% (see column 10, line 53, to column 11, line 8). Hair inherently possesses a certain degree of curl. Therefore, the application of transglutaminase to hair, described by Richardson, inherently results in retention, enhancing and imparting of curl to hair. Thus, a holding of anticipation is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a

later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4, 6-13 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richardson et al. (U.S. 5,490,980) in view of Dane, Hair Chemistry 1, The Trichological Society, www.hairscientists.org/hair-chemistry.htm, ©2000, printed from the Internet on July 26, 2004, and the record for transglutaminase from BRENDA, http://www.brenda.uni-koeln.de/php/result_flat.php4?ecno=2.3.2.13, printed July 26, 2004. As discussed above, Richardson discloses a method of cross-linking human keratin proteins, including those found in hair, by applying a composition comprising an effective amount of transglutaminase to hair. Richardson also discloses a method of covalently bonding an alkyl amine moiety, such as in lysine, to a glutamine residue, both of which are contained in the keratin of hair, by contacting the hair with a composition comprising an effective amount of transglutaminase (see column 1, lines 14-20; column 1, line 51, to column 2, line 8; column 2, lines 23-38). The source of the transglutaminase may be mammalian or microbial and may be present in an amount of 0.001% to 20% (see column 10, line 53, to column 11, line 8). Richardson does not disclose the pH of the composition or applying heat to hair after applying the transglutaminase composition. Dane discloses, as is well known in the art of perming hair, that in creating curls and waves, disulfide bonds between the amino acids of keratin in hair are broken and new ones formed, thereby cross-linking the keratin in a new

arrangement (see last paragraph). Thus, one of ordinary skill in the art at the time that the invention was made would have recognized that in designing a product to maintain or enhance the curl of permed hair, it would have been advantageous to have included an ingredient that can cross-link keratin, as disclosed by Richardson, to maintain the new cross-linking pattern in hair resulting from the perm by applying a second cross-linking agent. The skilled artisan would have been motivated to use the method of Richardson to maintain or enhance the curl of permed hair, because Richardson teaches that applying a transglutaminase composition can not only cross-link hair, it can also condition and repair damaged hair by catalyzing the reaction of primary amines with superficial glutamines in hair keratin (see column 18, line 44, to column 19, line 27).

Regarding the pH of the transglutaminase composition, it is well known in the art that human transglutaminase has a pH optimum of 6 (see record for transglutaminase from the BRENDA database, top of p. 19). Thus, it would have been obvious to one of ordinary skill in the art that, in preparing a composition comprising transglutaminase, as disclosed by Richardson, an appropriate pH would have been approximately 6.

With respect to applying heat to a keratinous material after applying a transglutaminase-containing composition, it is well known in the pertinent art that, after conditioning or applying a therapeutic treatment composition to hair, the hair may be subjected to heat with a hair dryer or blow dryer to style or reinforce curls. Thus, it would have been obvious to one of ordinary skill in the art that,

following the treatment of hair with a composition comprising an effective amount of transglutaminase to maintain or enhance curl, as disclosed by Richardson, the hair would have been subjected to heat to style the curled hair or to reinforce the curl. Thus, a holding of obviousness is required.

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richardson et al. (U.S. 5,490,980) in view of Dane, Hair Chemistry 1, The Trichological Society, www.hairscientists.org/hair-chemistry.htm, ©2000, printed from the Internet on July 26, 2004, as discussed above, and further in view of product literature for eyelash perms from E-Z Permanent Makeup (http://www.eyelashperm.com, which has an embedded link for ordering and product information at http://www.ezpermanentmakeup.com), printed from the Internet on July 26, 2004. As discussed in the rejection of claims 1-4, 6-13 and 15-18 above, Richardson discloses a method of cross-linking human keratin proteins and a method of covalently bonding an alkyl amine moiety, such as in lysine, to a glutamine residue, both of which are contained in the keratin of hair, by applying a composition comprising an effective amount of transglutaminase to hair (see column 1, lines 14-20; column 1, line 51, to column 2, line 8; column 2, lines 23-38). Richardson does not disclose applying a transglutaminase composition to eyelashes. Dane discloses that in creating curls, disulfide bonds between the amino acids of keratin in hair are broken and new ones formed, thereby cross-linking the keratin in a new arrangement (see last paragraph). E-Z Permanent Makeup discloses that a permanent wave may also be applied to

eyelashes, another form of human keratin protein. Accordingly, one of ordinary skill in the art at the time that the invention was made would have recognized that in designing a product to maintain or enhance the curl of permed eyelashes, it would have been advantageous to have included an ingredient that can cross-link keratin, as disclosed by Richardson, to maintain the new cross-linking pattern in the eyelashes resulting from the perm by applying a second cross-linking agent. The skilled artisan would have been motivated to use the method of Richardson to maintain or enhance the curl of permed eyelashes, because Richardson teaches that applying a transglutaminase composition can not only cross-link keratin, it can also condition and repair damaged keratin by catalyzing the reaction of primary amines with superficial glutamines in the keratin (see column 18, line 44, to column 19, line 27). Thus, a holding of obviousness is required.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosanne Kosson whose telephone number is 571-272-2923. The examiner can normally be reached on Monday-Friday, 8:30-6:00, with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rosanne Kosson
Examiner
Art Unit 1651

FRANCISCO PRATS
PRIMARY EXAMINER

rk
2004-07-26